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10/774,044	02/09/2004	Kunihiko Kanai	93347TJS	4993

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Patent Legal Staff
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EXAMINER	
HERNANDEZ, NELSON D	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/774,044	KANAI, KUNIHIKO
	Examiner	Art Unit
	Nelson D. Hernandez	2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/9/2004*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. **Claim 12** is objected to because of the following informalities: the limitations "calculate a partial focal length for each image detecting area based on which image data the peak value of contrast evaluated values has been recorded in" are written twice. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Omata et al. US Patent 6,441,855 B1.**

Regarding claim 12, claim 12 is written in a Markush type by using the expression "select a focal length from a group consisting of said partial focal lengths and at least one given focal length", meeting one species of a genus family anticipates the claimed subject matter. "A generic claim cannot be allowed to an applicant if the prior art discloses a species falling within the claimed genus." The species in that case will anticipate the genus. In re Slayter, 276 F.2d 408, 411, 125 USPQ 345, 347 (CCPA 1960); In re Gosteli, 872 F.2d 1008, 10 USPQ2d 1614 (Fed. Cir. 1989).

Omata et al. discloses a focusing device, comprising: an image pickup device (Fig. 1: 11), an optical system (Fig. 1: 100) for forming an image on the image pickup device, an optical system driver (Fig. 1: 17) for changing the focal length of the optical system, and an image processor (signal processing unit 19 in conjunction with controller 18 as shown in fig. 1) for processing image data output from the image pickup device and controlling the optical system driver, wherein: the image processor is adapted to: obtain multiple image data while changing the focal length of the optical system by controlling the optical system driver (Col. 4, lines 45-67; col. 5, lines 1-24; col. 6, line 54 – col. 7, line 5), define a plurality of image detecting areas adjacent to one another in each one of the multiple image data obtained as above (See fig. 5), calculate a partial focal length for each image detecting area based on which image data the peak value of contrast evaluated values has been recorded in (Col. 6, lines 25-44), calculate the reliability (FV) of each image detecting area based on the position at which said peak value has been recorded moving across the multiple image data (col. 7, line 21 – col. 8, line 16; Omata et al. discloses that based on the position at which said peak value has been recorded moving across the multiple image data (by teaching changing the weight WH3 applied to each tile based on the peak position on the image data (col. 7, line 59 – col. 8, line 16), Omata et al,. discloses that the reliability FV is based on the position at which said peak value has been recorded moving across the multiple image data), and select a focal length from a group consisting of said partial focal lengths, said focal length being selected based on the reliability and the evaluated values of each respective image detecting area (Omata et al teaches finding the correct lens position

by finding the total sums FV_{total}, wherein the maximum FV_{total} represents the correct lens position; the focal length is detected based on the reliability for each evaluated value) (Col. 4, lines 45-67; col. 5, lines 1-24; col. 6, line 54 – col. 9, line 28).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claim 1, 2, 3/1, 3/2, 4/1, 4/2, 5/1, 5/2, 6/1, 6/2, 7/1 and 7/2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omata et al. US Patent 6,441,855 B1 in view of Fujita et al., US Patent 4,831,404.**

Regarding claim 1, Omata et al. discloses a method of detecting a focal length, comprising: setting a plurality of image detecting areas (FA) adjacent to one another (See fig. 5); obtaining multiple image data while changing the focal length of an optical system (Col. 4, lines 45-67; col. 5, lines 1-24; col. 6, line 54 – col. 7, line 5); calculating from said multiple image data a partial focal length (Col. 6, lines 25-44) for each image detecting area based on which image data the peak value of contrast evaluated values has been recorded in (Col. 6, lines 25-44), and the reliability (FV) of each image detecting area (col. 7, line 21 – col. 8, line 16; Omata et al. discloses that based on the position at which said peak value has been recorded moving across the multiple image data (by teaching changing the weight WH3 applied to each tile based on the peak

position on the image data (col. 7, line 59 – col. 8, line 16), Omata et al,. discloses that the reliability FV is based on the position at which said peak value has been recorded moving across the multiple image data); and selecting a focal length from said partial focal lengths (Omata et al teaches finding the correct lens position by finding the total sums FV_{total}, wherein the maximum FV_{total} represents the correct lens position), said focal length being selected based on the reliability and the evaluated values of each respective image detecting area (Col. 4, lines 45-67; col. 5, lines 1-24; col. 6, line 54 – col. 9, line 28).

Omata et al. does not explicitly disclose the focal length being selected based on at least one reference focal length.

However, Fujita et al teaches an automatic focusing camera (Figs. 1 and 2) comprising a mode selection means (fig. 2: 21) that allows the user to decide whether to capture the image of the object using the a focusing position found by a focusing device (from different positions during evaluations; fig. 3; col. 4, lines 15-64) or to move the lens to an infinity set position (this is read as the reference focal length) to capture said image (Col. 3, line 46 – col. 6, line 2).

Therefore, taking the combined teaching of Omata et al. in view of Fujita et al. as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omata et al. by having the option to select a focal length between a value found in an automatic focusing or a user desired value to control the camera focus operation. The motivation to do so would have been to enable the user selecting a desired focus value if is not satisfied with the calculated one.

Regarding claim 2, Omata et al. discloses weighting evaluated values performed based on the calculated reliability, and selecting a focal length from among the partial focal lengths of the image detecting areas based on the evaluated values thereof to which weighting has been applied (by teaching finding the correct lens position by finding the total sums FV_{total}, wherein the maximum FV_{total} represents the correct lens position (col. 7, line 59 – col. 8, line 16), Omata et al. discloses weighting evaluated values performed based on the calculated reliability and selecting a focal length from among the partial focal lengths of the image detecting areas based on the evaluated values thereof to which weighting has been applied). Grounds for rejecting claim 1 apply here.

Regarding claims 3/1 and 3/2, Omata et al discloses that should a position at which a peak value has been recorded move from at least one image detecting area that contains said position into at least one other image detecting area, the reliability of the first-mentioned image detecting area is reduced (when evaluating the tiles of the focusing area for each lens position, a weight is value is obtaining for each tile based on the peak positions at the different lens positions, Omata et al. inherently discloses that if a the reliability of a particular tile is reduced when a peak position changes from said particular tile to another, since if the object is moving or a different object in the image appears to be better focused, the reliability of said particular tile that before had larger reliability is reduced when evaluating at a different lens position) (Col. 4, lines 45-67; col. 5, lines 1-24; col. 6, line 54 – col. 9, line 28).

Regarding claim 4/1 and 4/2, Omata et al. discloses that should a position at which a peak value has been recorded move more than a given distance across plural image detecting areas that contain said positions at which peak values have been recorded, the reliability is reduced (when evaluating the tiles of the focusing area for each lens position, a weight is value is obtaining for each tile based on the peak positions at the different lens positions, Omata et al. inherently discloses that if a the reliability of a particular tile is reduced when a peak position changes from said particular tile to another by a particular distance (measured in tiles), since if the object is moving or a different object in the image appears to be better focused, the reliability of said particular tile that before had larger reliability is reduced when evaluating at a different lens position) (Col. 4, lines 45-67; col. 5, lines 1-24; col. 6, line 54 – col. 9, line 28).

Regarding claims 5/1 and 5/2, the combined teaching of Omata et al. in view of Fujita et al. fails to teach that in cases where image data containing a great peak value has been obtained, the number of images to be subsequently obtained in the form of data is reduced.

However, Official Notice is taken that the concept of reducing the number of subsequent images used for focus evaluation after a great peak value is found (i.e. in a Hill Climbing focusing method, image samples are taken (while a focus lens is moved to different lens positions) while the amount of focus is detected for each image sample until a peak value is found compared to next image samples, at that time the lens is just moved a fewer more times compared to the images captured before finding the peak to

capture several images samples to determine where the focus lens has to be moved to obtained the correct focus position) is notoriously well known in the art and one of ordinary skill in the art would find obvious at the time the invention was made to modify the teaching of Omata et al. and Fujita et al. to reduce the amount of images taken for focus evaluations after a great peak value is found so that the focusing method would not require to obtain image samples at the whole moving range of the focusing lens with the motivation of reducing the time required to focus an image pick-up device.

Regarding claims 6/1 and 6/2, the combined teaching of Omata et al. in view of Fujita et al. as discussed and analyzed in claims 1, 4/1 and 4/2 teaches a peak point movement determining value, which is used at the time of calculation of a reliability for determining whether a position at which a peak value has been recorded has moved is a variable calculated based on photographing conditions (Omata et al. discloses that the if a peak that was present in a particular tile is not in the subsequent image measurement with the focus lens in a different position, a lower weight (WH3) (read as reliability) is given to said particular tile (col. 4, lines 45-67; col. 5, lines 1-24; col. 6, line 54 – col. 9, line 28). By teaching that the different weight, which is lower than the weight given to the particular tile in a previous measurement, wherein the different measurements are performed at different focus lens positions, Omata et al. inherently discloses that a peak point movement determining value, which is used at the time of calculation of a reliability for determining whether a position at which a peak value has been recorded has moved is a variable calculated based on photographing conditions). Grounds for rejecting claims 1, 4/1 and 4/2 apply here.

Regarding claims 7/1 and 7/2, the combined teaching of Omata et al. in view of Fujita et al. as discussed and analyzed in claim 1 teaches the same as in claims 6/1 and 6/2. Therefore, grounds for rejecting claims 6/1 and 6/2 apply here.

6. Claims 8/1, 8/2, 9/1, 9/2, 10/1, 10/2, 11/1 and 11/2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omata et al. US Patent 6,441,855 B1 in view of Fujita et al., US Patent 4,831,404 and further in view of Hamada et al., US Patent 5,819,120.

Regarding claims 8/1 and 8/2, the combined teaching of Omata et al. in view of Fujita et al. as teaches that the focal length is selected from among the partial focal lengths in the image detecting areas, the partial focal length at the longest distance, in accordance with the operator's choice (See Fujita et al., col. 3, line 46 – col. 6, line 2) but fails to teach that the focal length is selected from among the partial focal lengths in the image detecting areas, the partial focal length at the shortest distance, in accordance with the operator's choice.

However, the teaching of performing focusing control by having a priority focal length of either short distance of long distance in accordance with a operator's choice is notoriously well known in the art as taught by Hamada et al. Hamada et al. discloses establishing a priority of selecting the focal length when performing focusing by selecting whether the focus lens (Fig. 1: 12) should start at a long distance position or at a short distance position in accordance with the user's preference so that in the case the user tends to take pictures at wide angle settings, the variable focus lens may be

moved to the wide angle end and if the user tends to take pictures at the telephoto end, the variable focus lens may be moved to the telephoto end and if the user tends to take pictures at the standard focal length, the variable focus lens may be moved to the standard position (Col. 6, line 50 – col. 7, line 42).

Therefore, taking the combined teaching of Omata et al. in view of Fujita et al. and further in view of Hamada et al. as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omata et al. and Fujita et al. by having the option of selecting the focal length is selected from among the partial focal lengths in the image detecting areas, either the partial focal length at the shortest distance or the partial focal length at the longest distance, in accordance with the operator's choice. The motivation to do so would have been to reduce the amount of time required to achieve focusing since the focus lens would start moving from a position where the user tends to capture images thus the steps of evaluating image data in the focusing method is also reduced.

Regarding claims 9/1 and 9/2, the combined teaching of Omata et al. in view of Fujita et al. and further in view of Hamada et al. teaches the same as discussed and analyzed in claims 8/1 and 8/2. Grounds for rejecting claims 8/1 and 8/2 apply here.

Regarding claims 10/1, 10/2, 11/1 and 11/2, the combined teaching of Omata et al. in view of Fujita et al. and further in view of Hamada et al. as discussed and analyzed in claims 8/1 and 8/2 teaches that the focal length is selected, based on the reliability (Omata et al teaches finding the correct lens position by finding the total sums FV_{total} (FV is read as the reliability), wherein the maximum FV_{total} represents the correct

lens position), between a partial focal length selected from among the partial focal lengths in the image detecting areas and a given focal length (short distance or long distance) that has been set as a result of the operator's choice (See Fujita et al., col. 3, line 46 – col. 6, line 2; see also Hamada et al., col. 6, line 50 – col. 7, line 42). Grounds for rejecting claims 8/1 and 8/2 apply here.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Omata et al. US Patent 6,441,855 B1 in view of Hamada et al., US Patent 5,819,120.

Regarding claim 13, Omata et al. does not explicitly disclose a photographing mode selector adapted to make a selection between a short-distance priority mode and a long-distance priority mode, and wherein the image processor is adapted to select the focal length with priority given to either the partial focal length at the shortest distance or the partial focal length at the longest distance in accordance with the result of operation of the photographing mode selector.

However, the teaching of selecting a mode between a short-distance priority mode and a long-distance priority mode, wherein the image processor is adapted to select the focal length with priority given to either the partial focal length at the shortest distance or the partial focal length at the longest distance in accordance with the result of operation of the photographing mode selector to perform focusing control is notoriously well known in the art as taught by Hamada et al. Hamada et al. discloses establishing a priority of selecting the focal length when performing focusing by selecting whether the focus lens (Fig. 1: 12) should start at a long distance position or at

a short distance position (different modes) in accordance with the user's preference so that in the case the user tends to take pictures at wide angle settings, the variable focus lens may be moved to the wide angle end and if the user tends to take pictures at the telephoto end, the variable focus lens may be moved to the telephoto end and if the user tends to take pictures at the standard focal length, the variable focus lens may be moved to the standard position (Col. 6, line 50 – col. 7, line 42).

Therefore, taking the combined teaching of Omata et al. in view of Hamada et al. as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omata et al. by having a photographing mode selector adapted to make a selection between a short-distance priority mode and a long-distance priority mode, and wherein the image processor is adapted to select the focal length with priority given to either the partial focal length at the shortest distance or the partial focal length at the longest distance in accordance with the result of operation of the photographing mode selector. The motivation to do so would have been to reduce the amount of time required to achieve focusing since the focus lens would start moving from a position where the user tends to capture images thus the steps of evaluating image data in the focusing method is also reduced.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Omata et al. US Patent 6,441,855 B1 in view of Hamada et al., US Patent 5,819,120 and further in view of Mima et a., US Patent 4,910,547.

Regarding claim 14, the combined teaching of Omata et al. in view of Hamada et al. fails to teach that the optical system driver is capable of driving the optical system into an overstroke range, which is a range beyond the range of focal length for which the optical system is designed.

However, the concept of driving the optical system into an overstroke range when performing focusing is notoriously well known in the art as taught by Mima et al. Mima et al. discloses a lens driving system (Fig. 1), wherein the optical system driver is capable of driving the optical system into an overstroke range to perform focusing by setting an initial position that exceeds the maximum range of the focus lens in order to minimize the number of evaluation made to perform focusing since a large number of the images captured are performed in the far zone (Col. 6, line 50 – col. 8, line 38).

Therefore, taking the combined teaching of Omata et al. in view of Hamada et al. and further in view of Mima et al. as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Omata et al. and Hamada et al. by driving the optical system into an overstroke range to perform focusing. The motivation to do so would have been to minimize the number of evaluation made to perform focusing since a large number of the images captured are performed in the far zone as suggested by Mima et al. (Col. 6, line 50 – col. 8, line 38).

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernandez whose telephone number is (571) 272-7311. The examiner can normally be reached on 8:30 A.M. to 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nelson D. Hernandez
Examiner
Art Unit 2622

NDHH
May 3, 2007

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